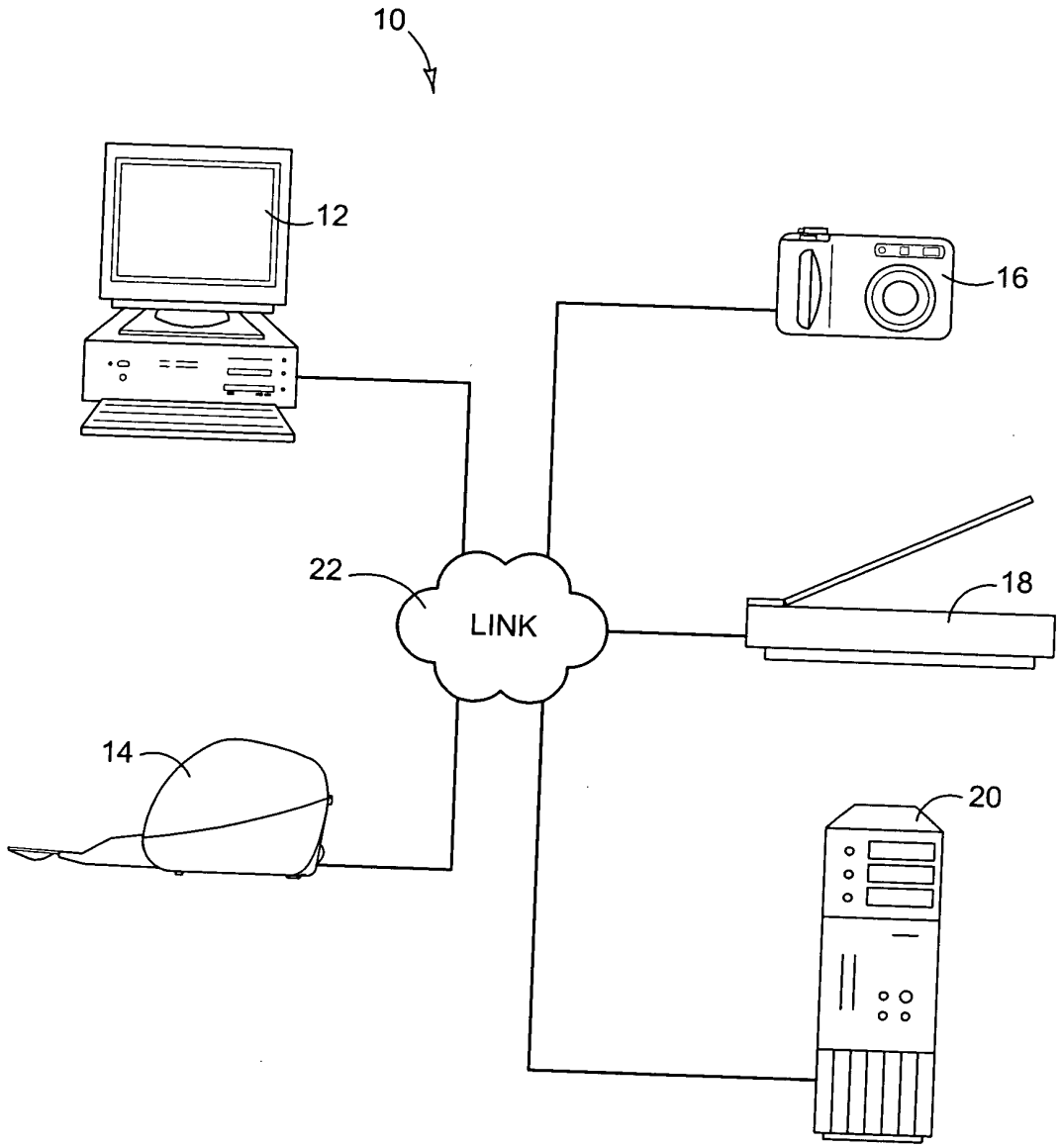

FIG. 1

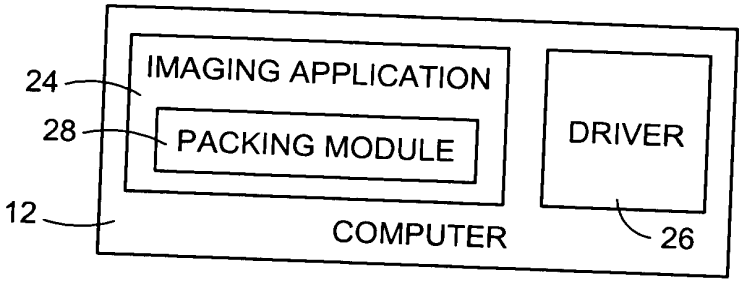

FIG. 2A

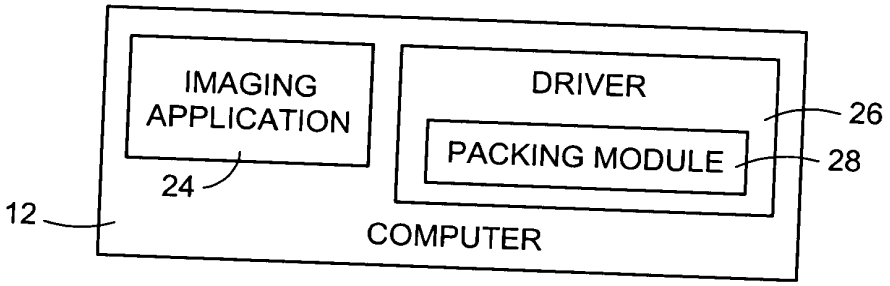

FIG. 2B

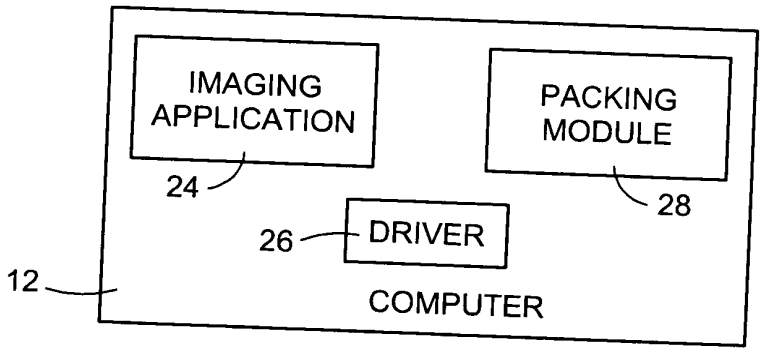

FIG. 2C

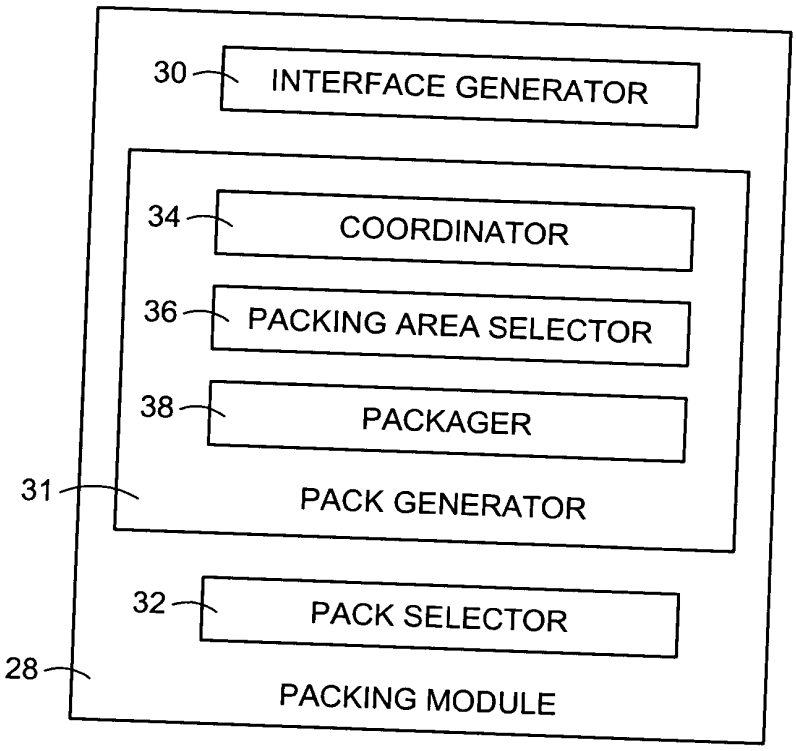
30
INTERFACE GENERATOR
34
COORDINATOR
36
PACKING AREA SELECTOR
38
PACKAGER
31
PACK GENERATOR
32
PACK SELECTOR
28
PACKING MODULE

FIG. 3

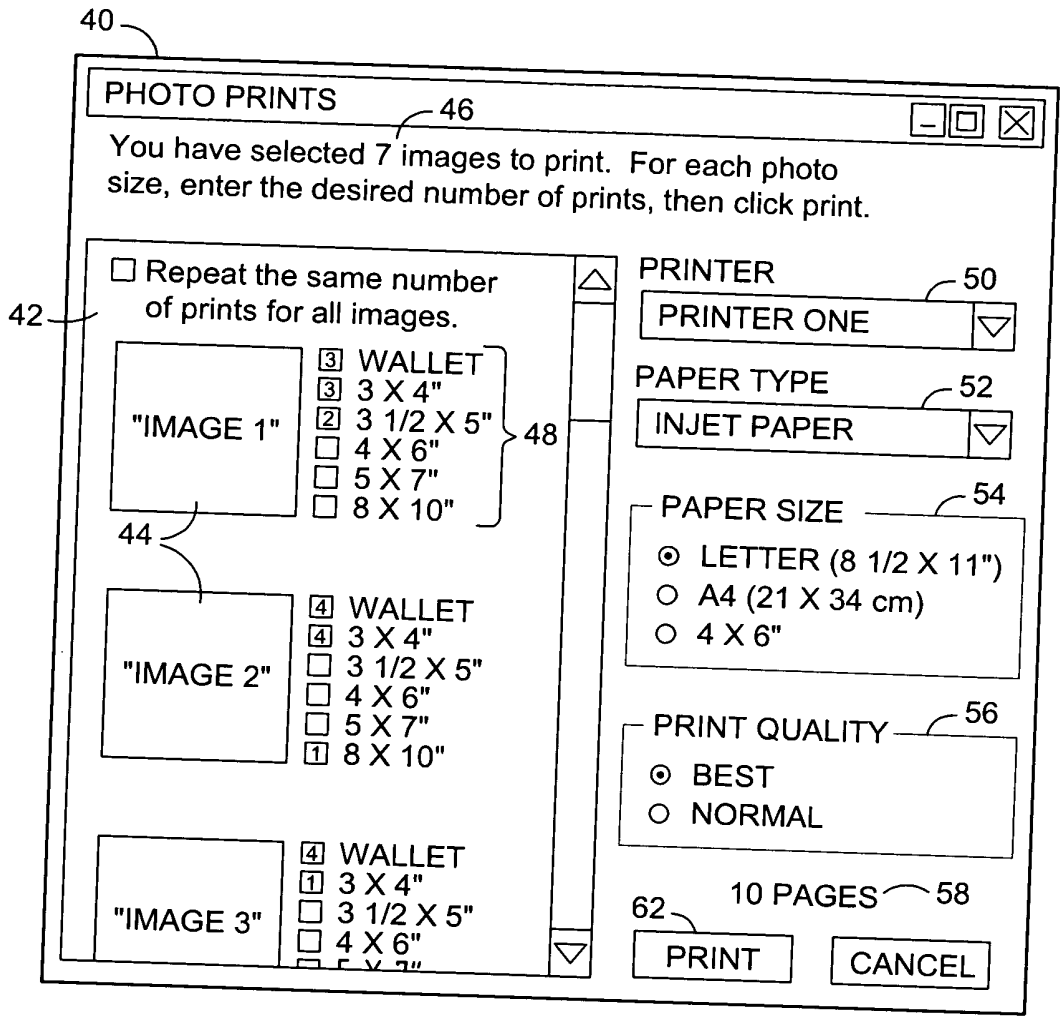
40
PHOTO PRINTS
46
You have selected 7 images to print. For each photo size, enter the desired number of prints, then click print.
Repeat the same number of prints for all images.
42
"IMAGE 1"
3 WALLET
3 3 X 4"
2 3 1/2 X 5"
4 X 6"
5 X 7"
8 X 10"
48
44
"IMAGE 2"
4 WALLET
4 3 X 4"
3 1/2 X 5"
4 X 6"
5 X 7"
1 8 X 10"
"IMAGE 3"
4 WALLET
1 3 X 4"
3 1/2 X 5"
4 X 6"
PRINTER
50
PRINTER ONE
PAPER TYPE
52
INJET PAPER
PAPER SIZE
54
LETTER (8 1/2 X 11")
A4 (21 X 34 cm)
4 X 6"
PRINT QUALITY
56
BEST
NORMAL
10 PAGES
58
62
PRINT
CANCEL

FIG. 4

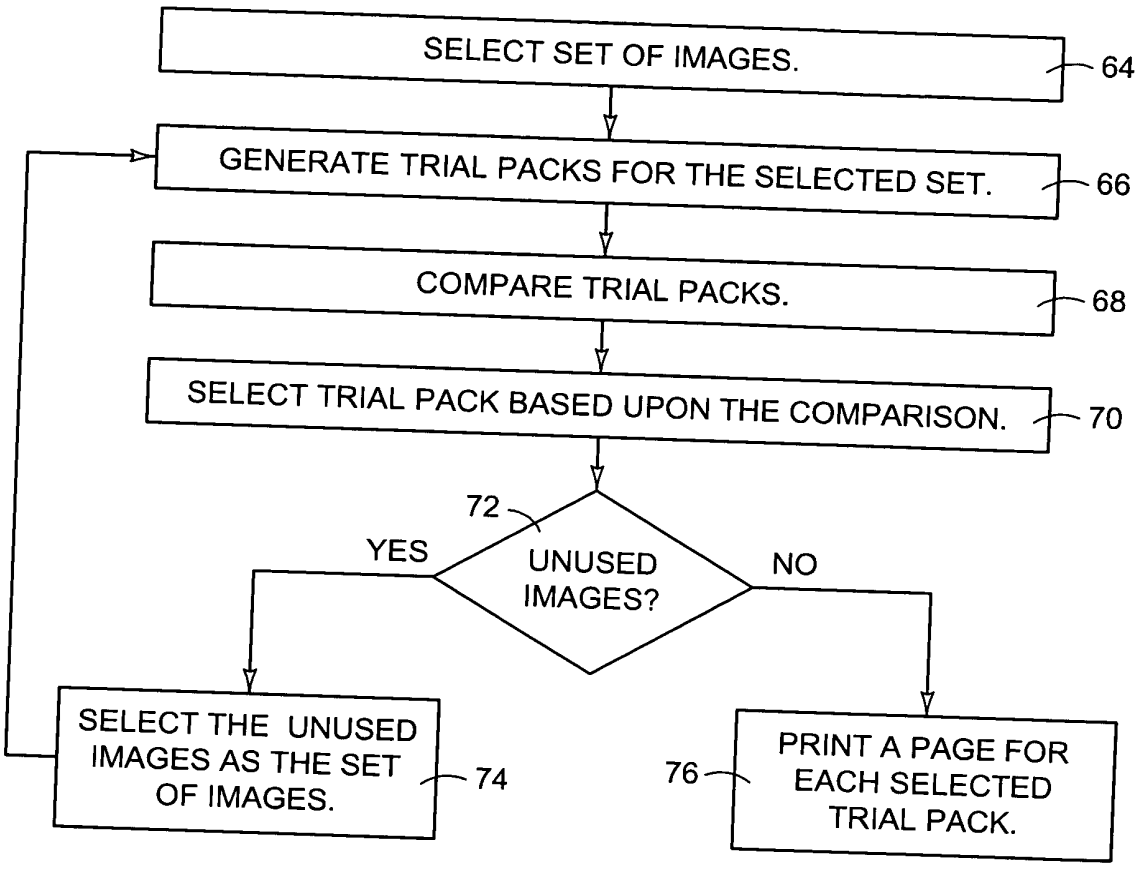
SELECT SET OF IMAGES.
64
GENERATE TRIAL PACKS FOR THE SELECTED SET.
66
COMPARE TRIAL PACKS.
68
SELECT TRIAL PACK BASED UPON THE COMPARISON.
70
72
UNUSED IMAGES?
YES
NO
SELECT THE UNUSED IMAGES AS THE SET OF IMAGES.
74
76
PRINT A PAGE FOR EACH SELECTED TRIAL PACK.

FIG. 5

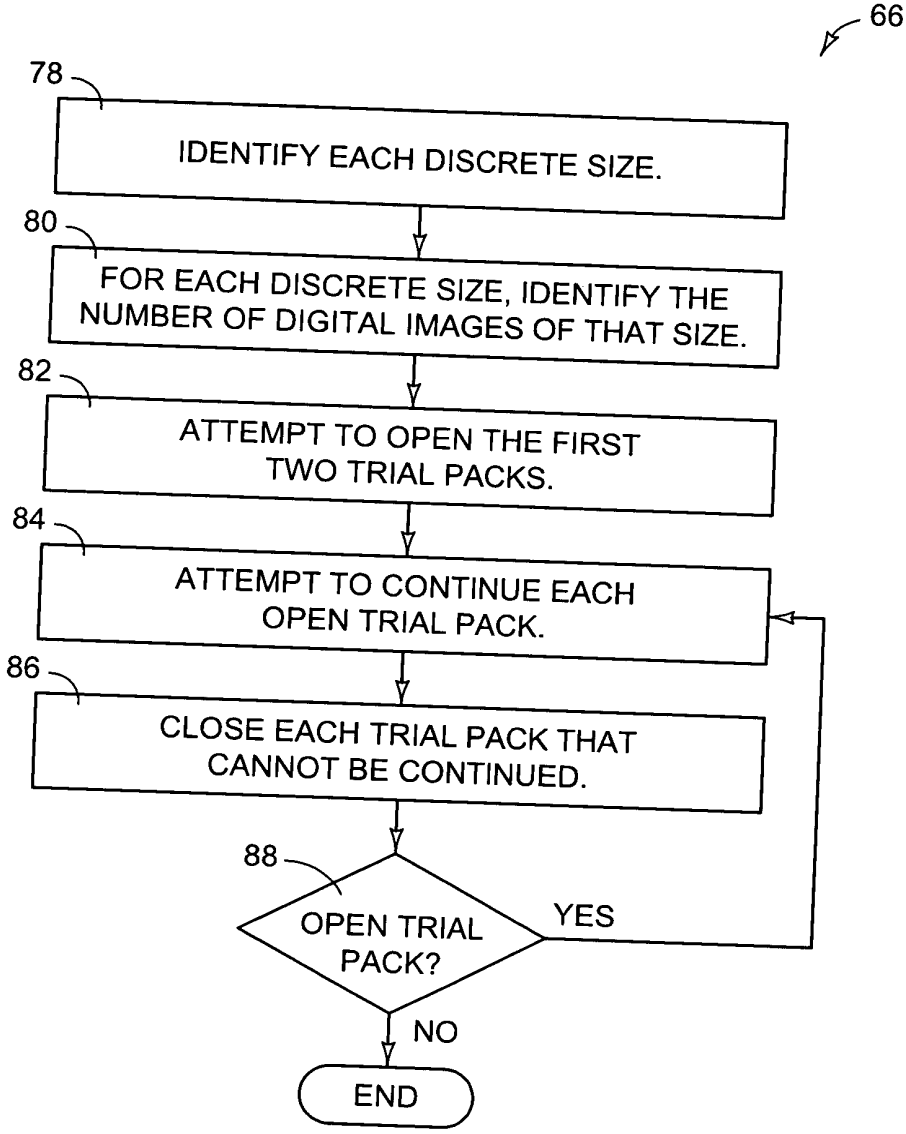
66
78
IDENTIFY EACH DISCRETE SIZE.
80
FOR EACH DISCRETE SIZE, IDENTIFY THE NUMBER OF DIGITAL IMAGES OF THAT SIZE.
82
ATTEMPT TO OPEN THE FIRST TWO TRIAL PACKS.
84
ATTEMPT TO CONTINUE EACH OPEN TRIAL PACK.
86
CLOSE EACH TRIAL PACK THAT CANNOT BE CONTINUED.
88
OPEN TRIAL PACK?
YES
NO
END

FIG. 6

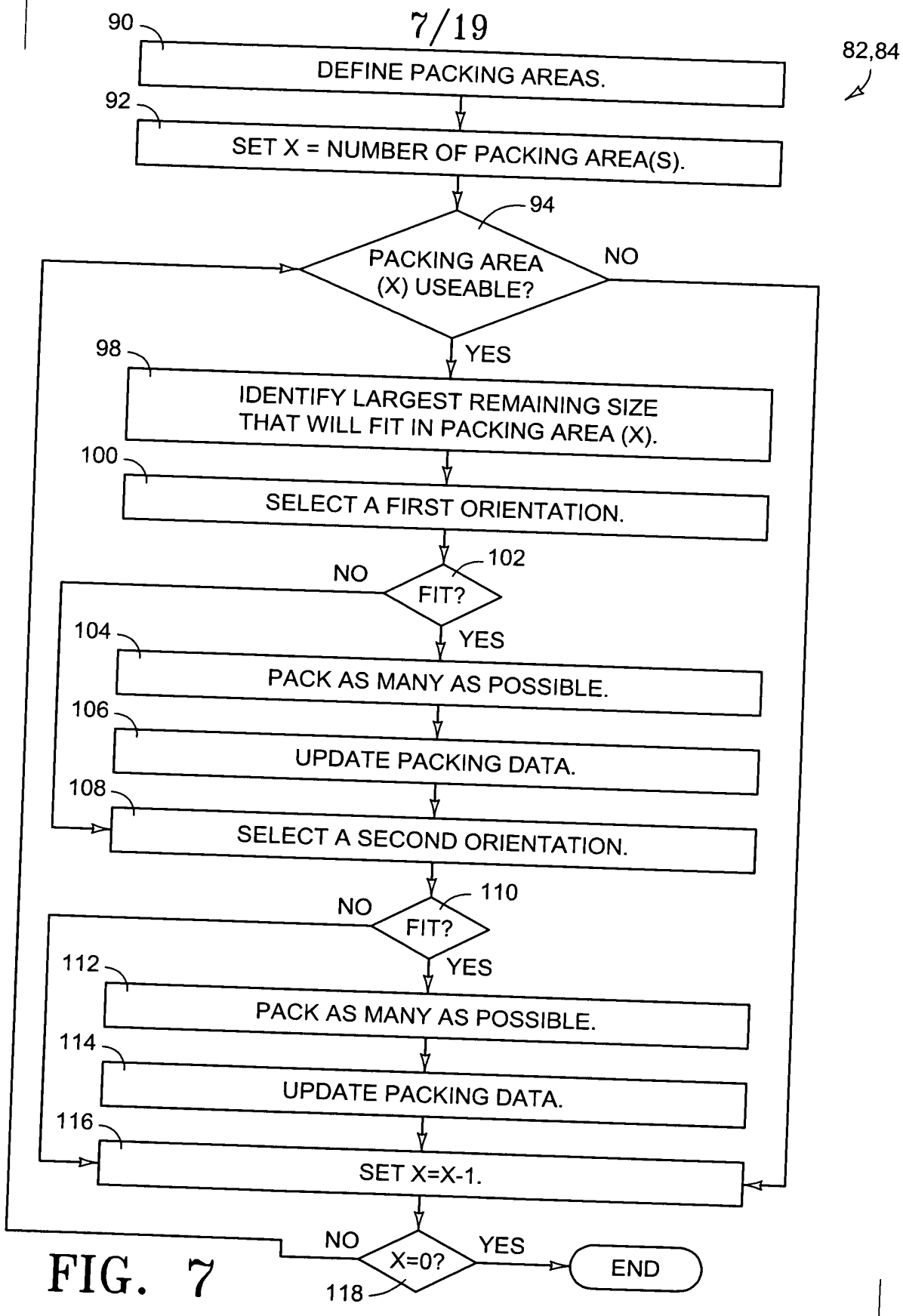
82,84
90
DEFINE PACKING AREAS.
92
SET X = NUMBER OF PACKING AREA(S).
94
PACKING AREA (X) USEABLE?
NO
YES
98
IDENTIFY LARGEST REMAINING SIZE THAT WILL FIT IN PACKING AREA (X).
100
SELECT A FIRST ORIENTATION.
102
NO
FIT?
YES
104
PACK AS MANY AS POSSIBLE.
106
UPDATE PACKING DATA.
108
SELECT A SECOND ORIENTATION.
110
NO
FIT?
YES
112
PACK AS MANY AS POSSIBLE.
114
UPDATE PACKING DATA.
116
SET X=X-1.
NO
X=0?
YES
118
END

FIG. 7

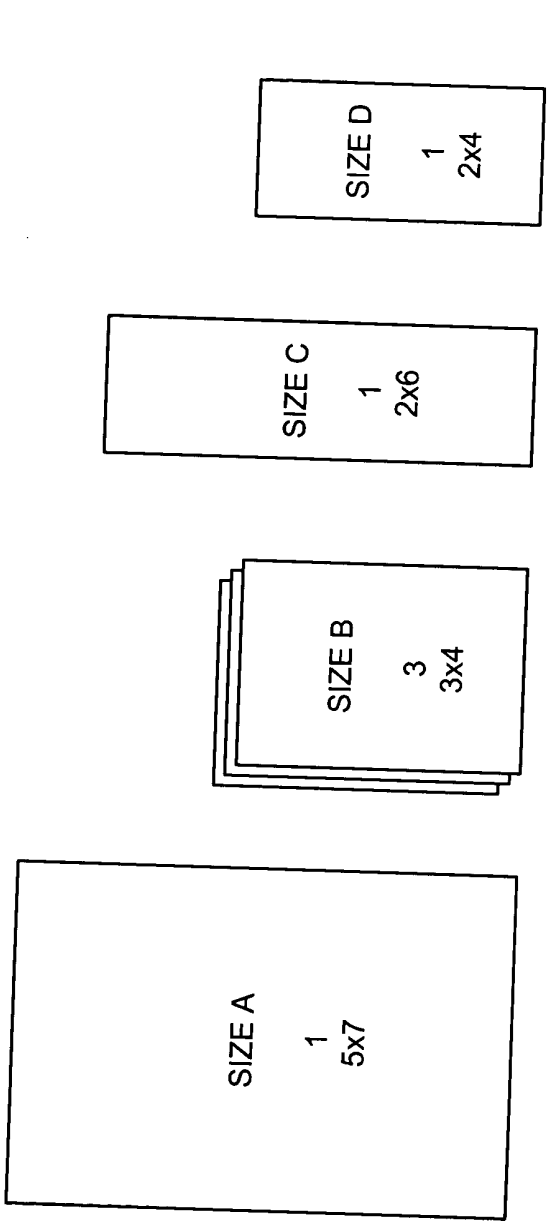

FIG. 8

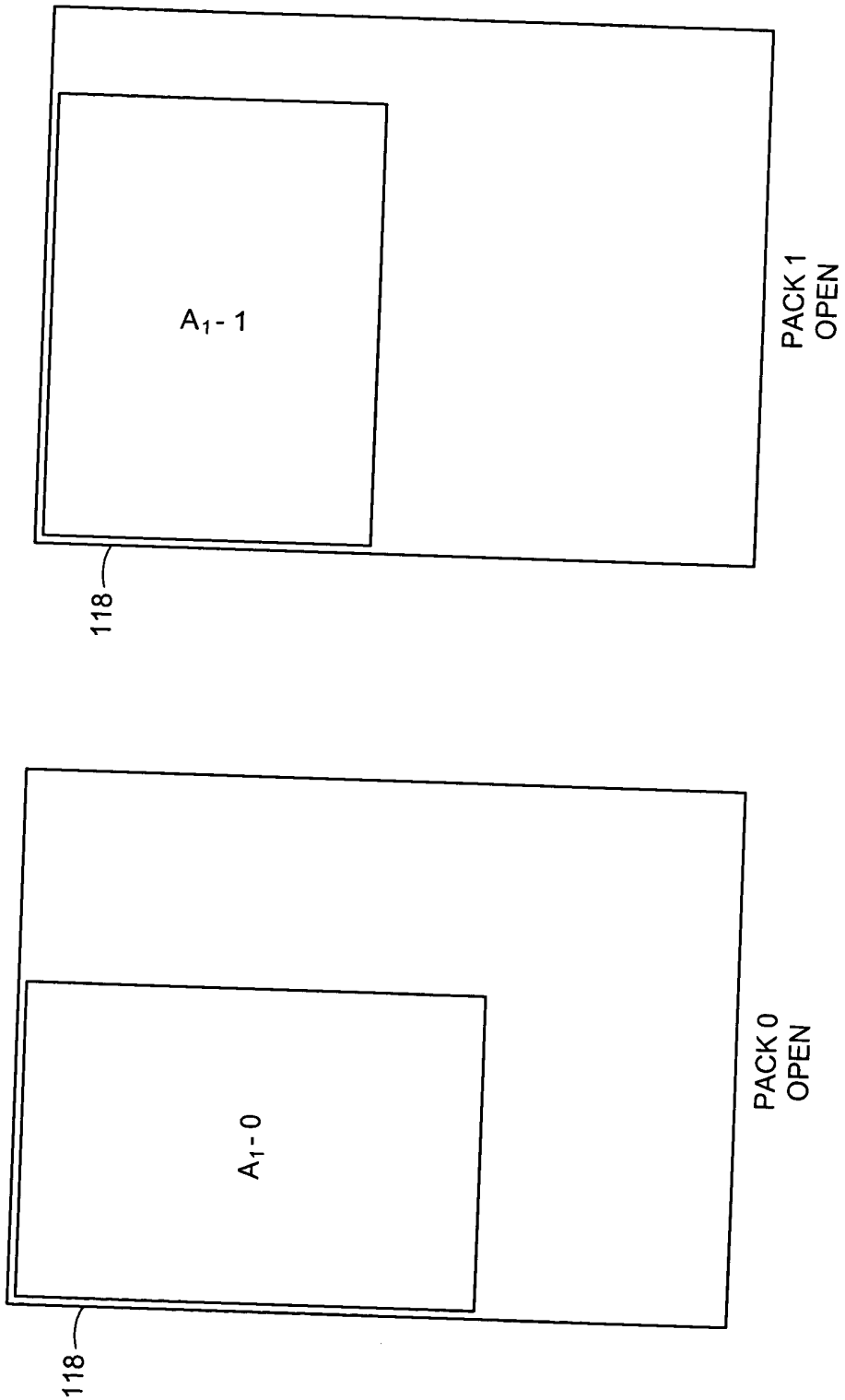

FIG. 9

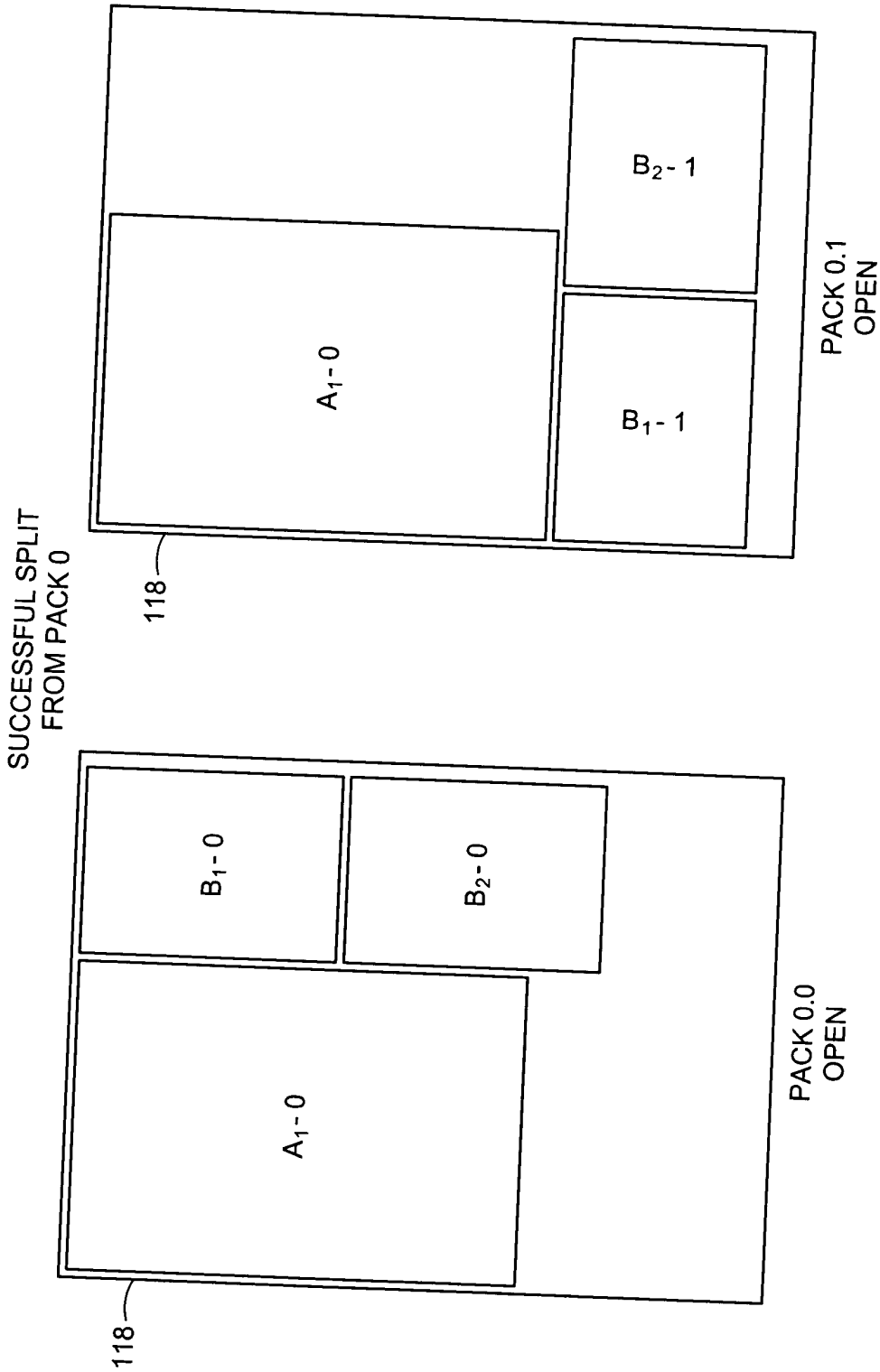
SUCCESSFUL SPLIT FROM PACK 0
PACK 0.1 OPEN
B_2 - 1
A_1 - 0
B_1 - 1
118
PACK 0.0 OPEN
B_1 - 0
B_2 - 0
A_1 - 0
118

FIG. 10

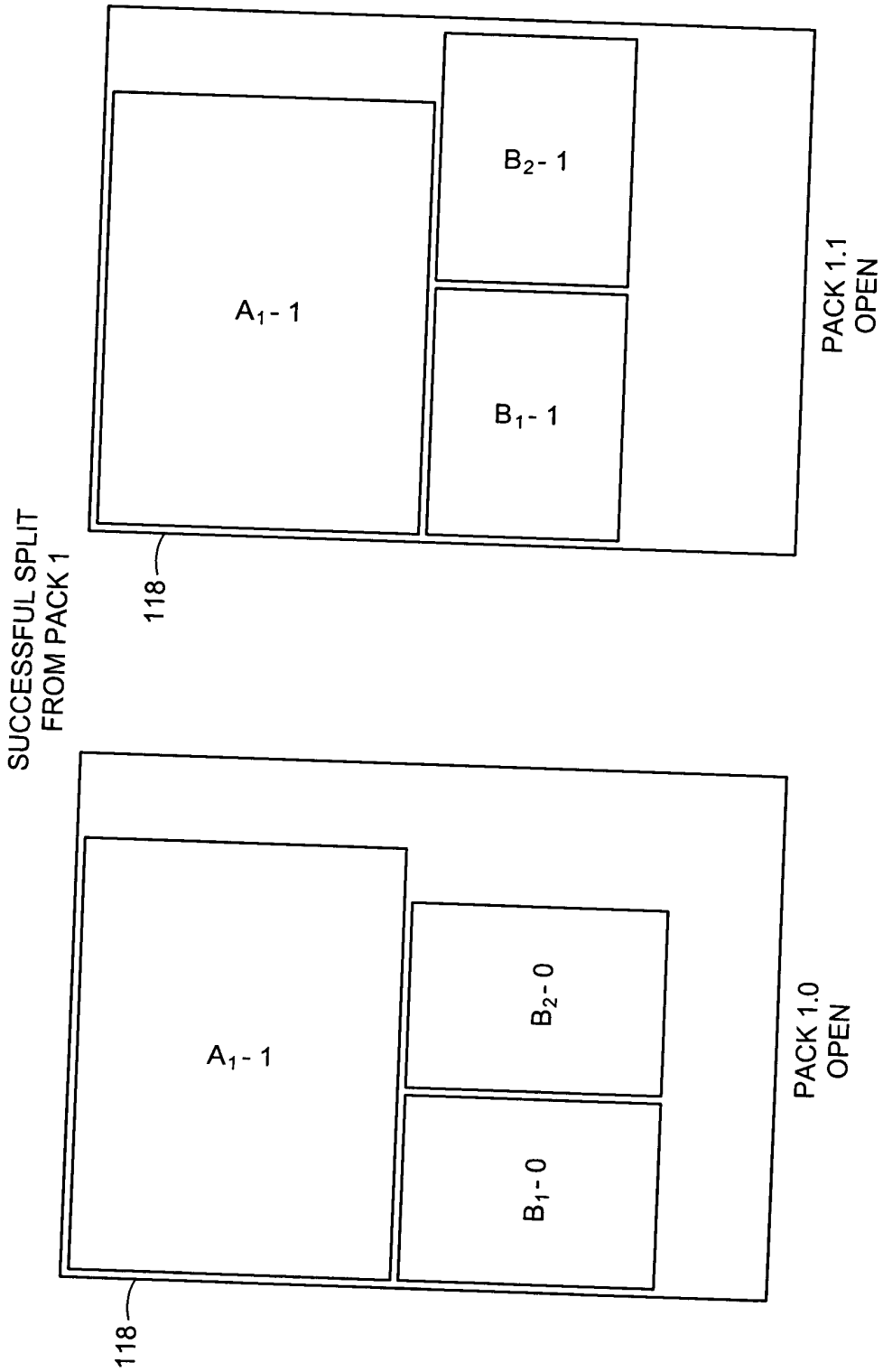
SUCCESSFUL SPLIT
FROM PACK 1
A_1 - 1
B_2 - 1
B_1 - 1
PACK 1.1
OPEN
118
A_1 - 1
B_2 - 0
B_1 - 0
PACK 1.0
OPEN
118

FIG. 11

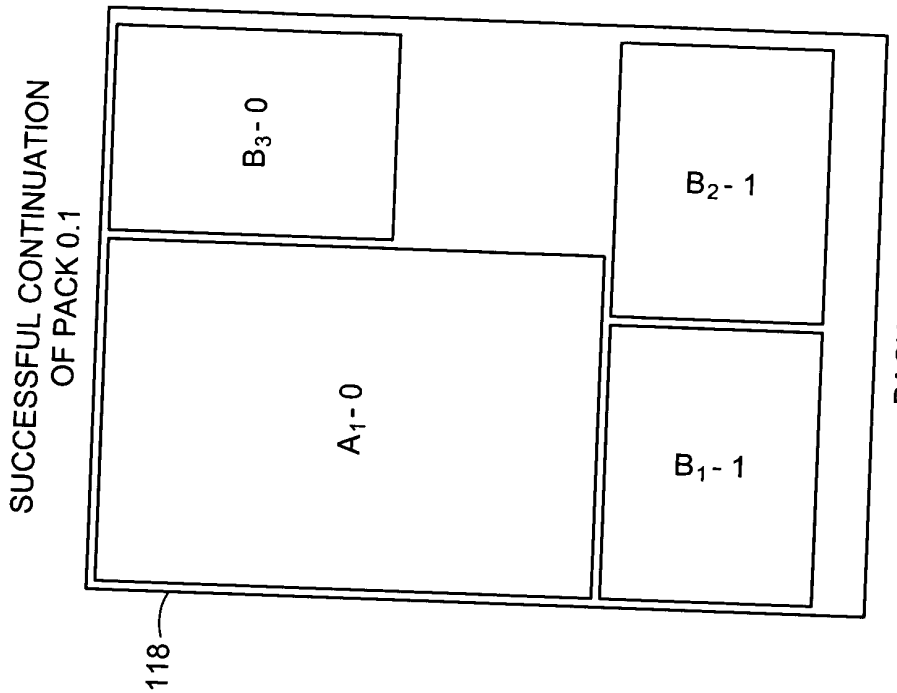
SUCCESSFUL CONTINUATION OF PACK 0.1
B_3 - 0
B_2 - 1
A_1 - 0
B_1 - 1
PACK 0.1.0 CLOSED
118

FIG. 13

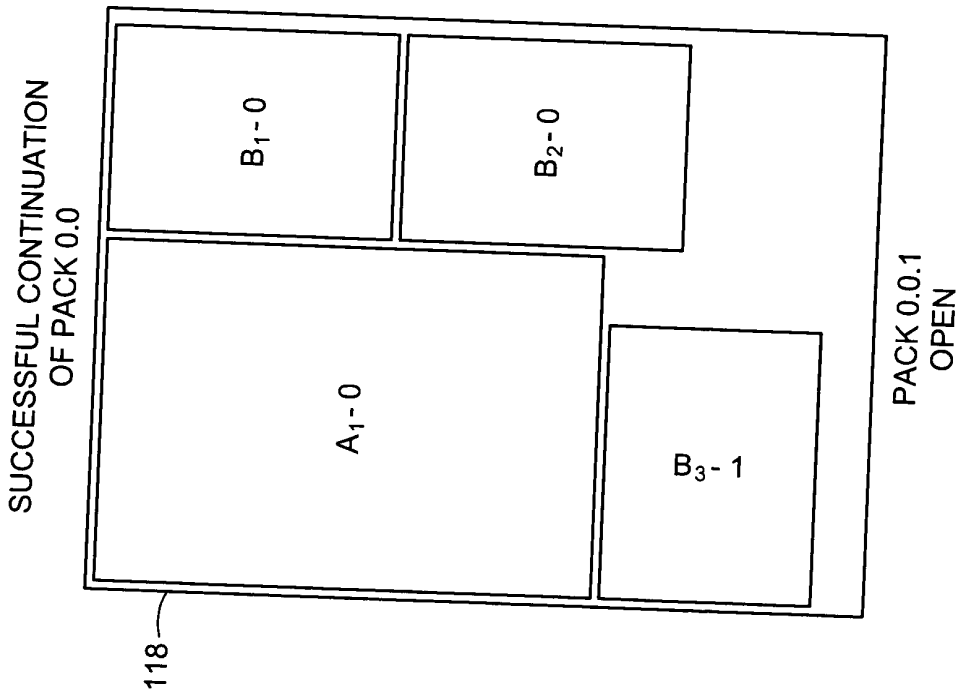
SUCCESSFUL CONTINUATION OF PACK 0.0
B_1 - 0
B_2 - 0
A_1 - 0
B_3 - 1
PACK 0.0.1 OPEN
118

FIG. 12

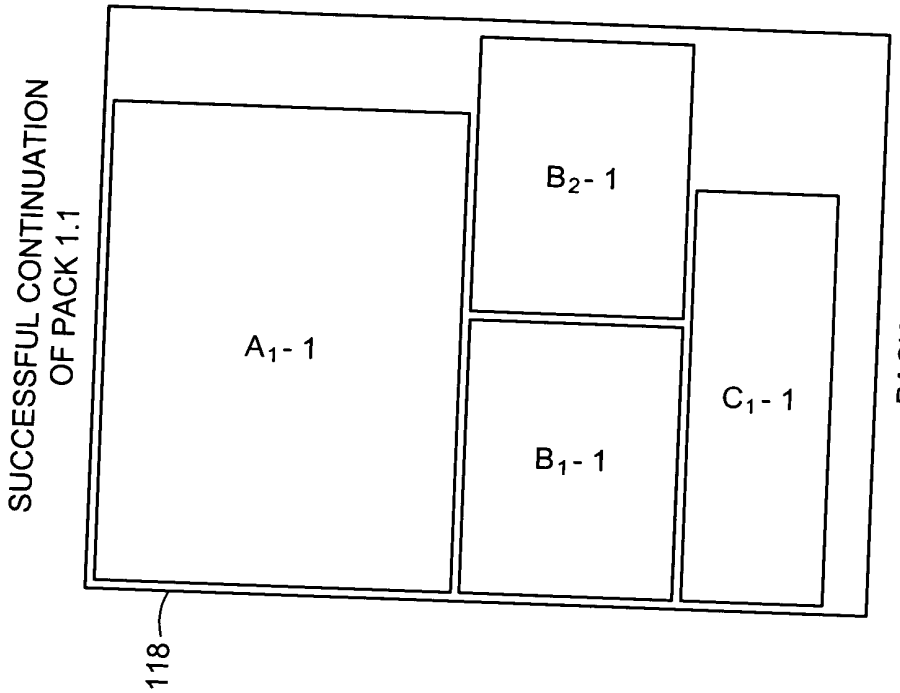
SUCCESSFUL CONTINUATION OF PACK 1.1
A_1 - 1
B_2 - 1
B_1 - 1
C_1 - 1
PACK 1.1.1 CLOSED
118

FIG. 15

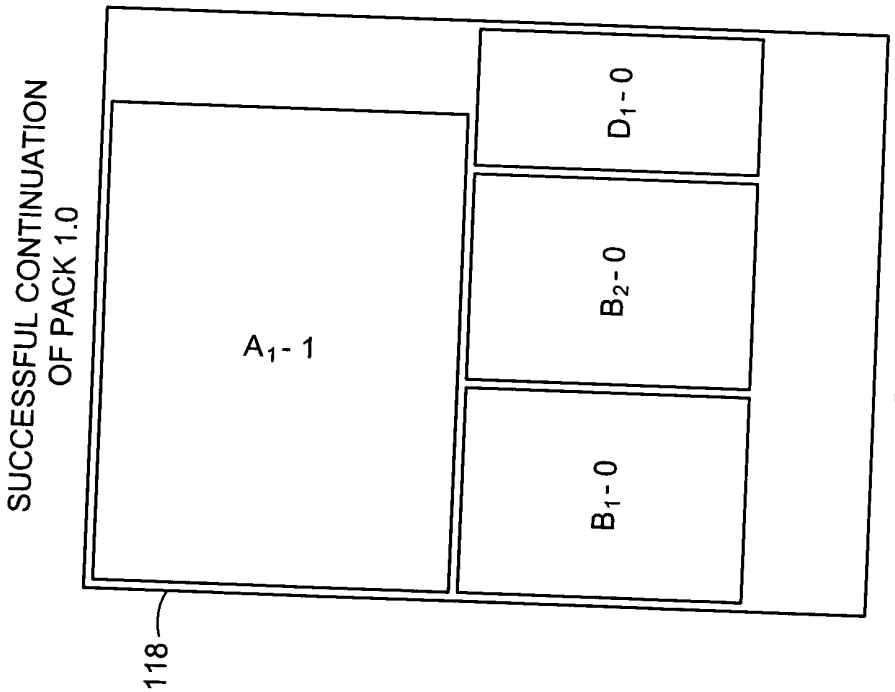
SUCCESSFUL CONTINUATION OF PACK 1.0
A_1 - 1
D_1 - 0
B_2 - 0
B_1 - 0
PACK 1.0.0 CLOSED
118

FIG. 14

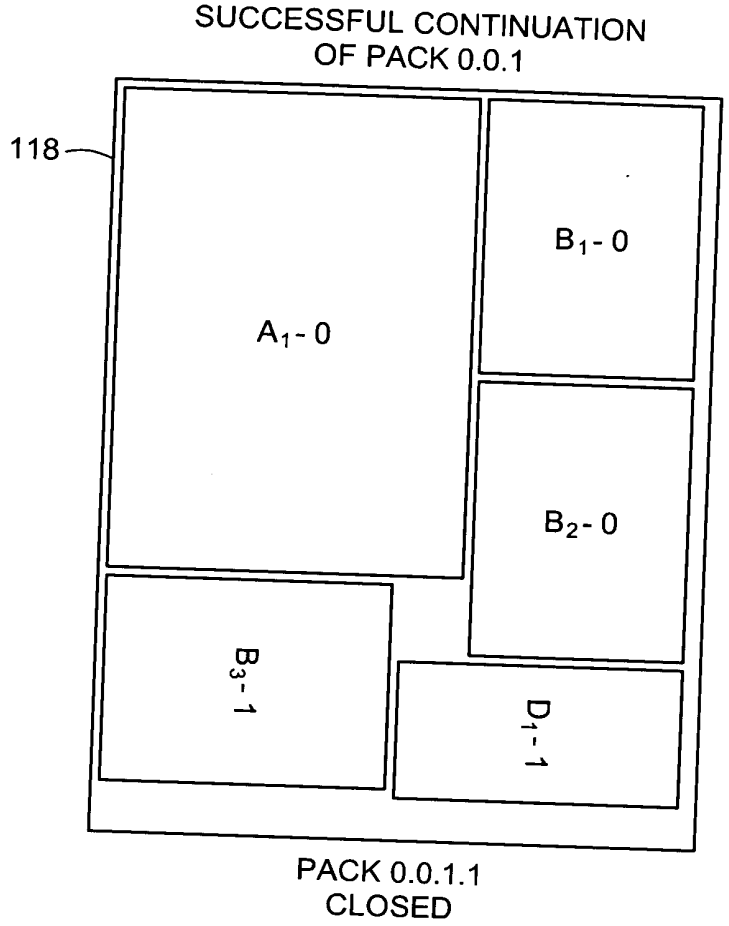

FIG. 16

120

PACKING DATA

124 PACK ID	126 ONE	128 TWO	130 THREE	132 FOUR
0.0.1.1	A_1 - 0	$B_{1,2}$ - 0	B_3 - 1	D_1 - 1
0.1.0	A_1 - 0	$B_{1,2}$ - 1	B_3 - 0	
1.0.0	A_1 - 1	$B_{1,2}$ - 0	D_1 - 0	
1.1.1	A_1 - 1	$B_{1,2}$ - 1	C_1 - 1	

122

FIG. 17

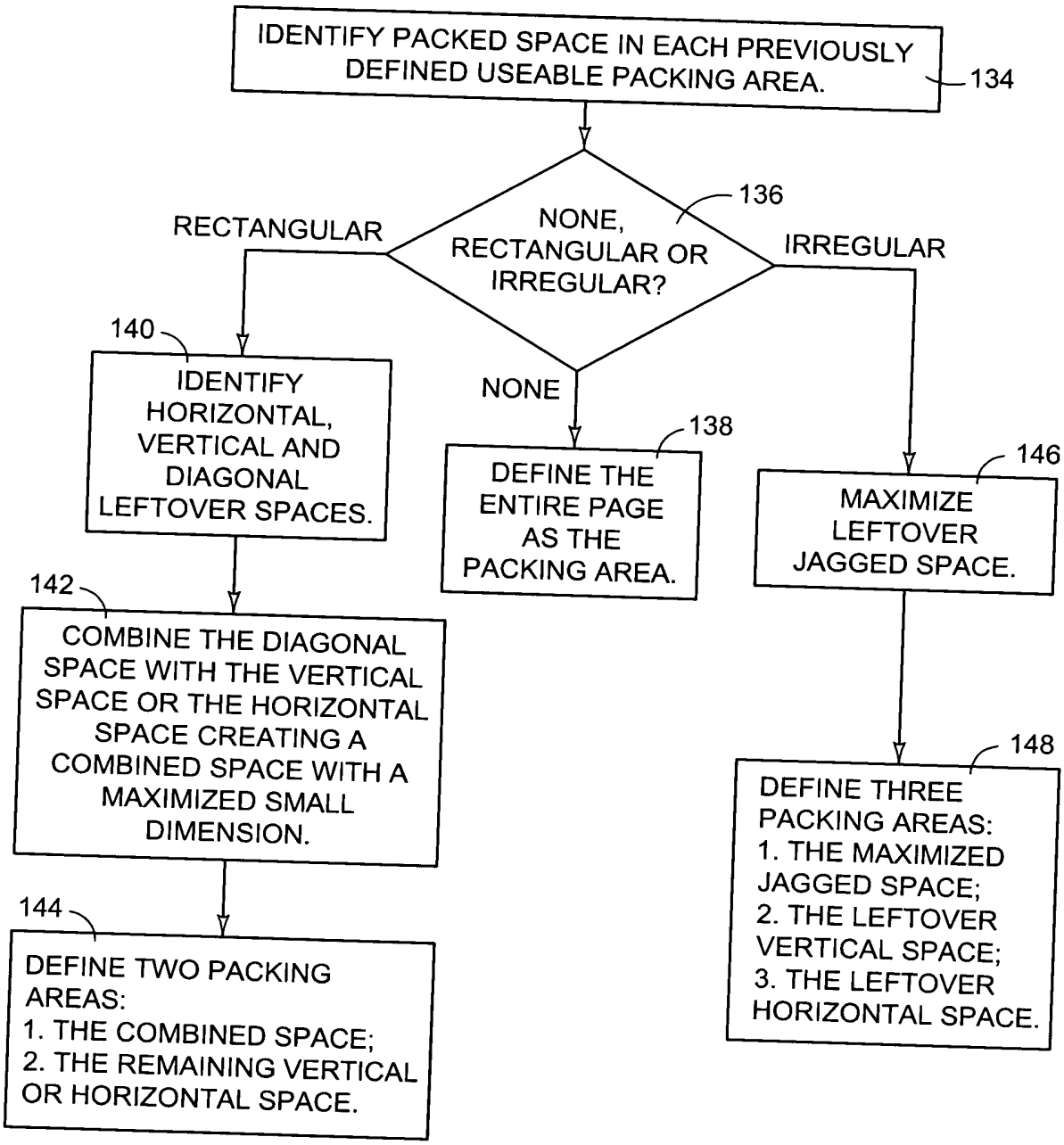
IDENTIFY PACKED SPACE IN EACH PREVIOUSLY DEFINED USEABLE PACKING AREA.
134
NONE, RECTANGULAR OR IRREGULAR?
136
RECTANGULAR
IRREGULAR
NONE
140
IDENTIFY HORIZONTAL, VERTICAL AND DIAGONAL LEFTOVER SPACES.
138
DEFINE THE ENTIRE PAGE AS THE PACKING AREA.
146
MAXIMIZE LEFTOVER JAGGED SPACE.
142
COMBINE THE DIAGONAL SPACE WITH THE VERTICAL SPACE OR THE HORIZONTAL SPACE CREATING A COMBINED SPACE WITH A MAXIMIZED SMALL DIMENSION.
148
DEFINE THREE PACKING AREAS:
1. THE MAXIMIZED JAGGED SPACE;
2. THE LEFTOVER VERTICAL SPACE;
3. THE LEFTOVER HORIZONTAL SPACE.
144
DEFINE TWO PACKING AREAS:
1. THE COMBINED SPACE;
2. THE REMAINING VERTICAL OR HORIZONTAL SPACE.

FIG. 18

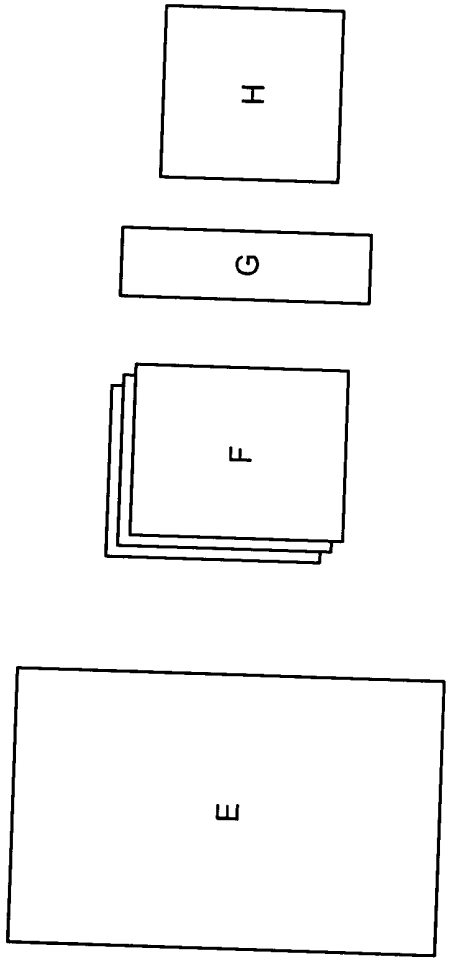

FIG. 19

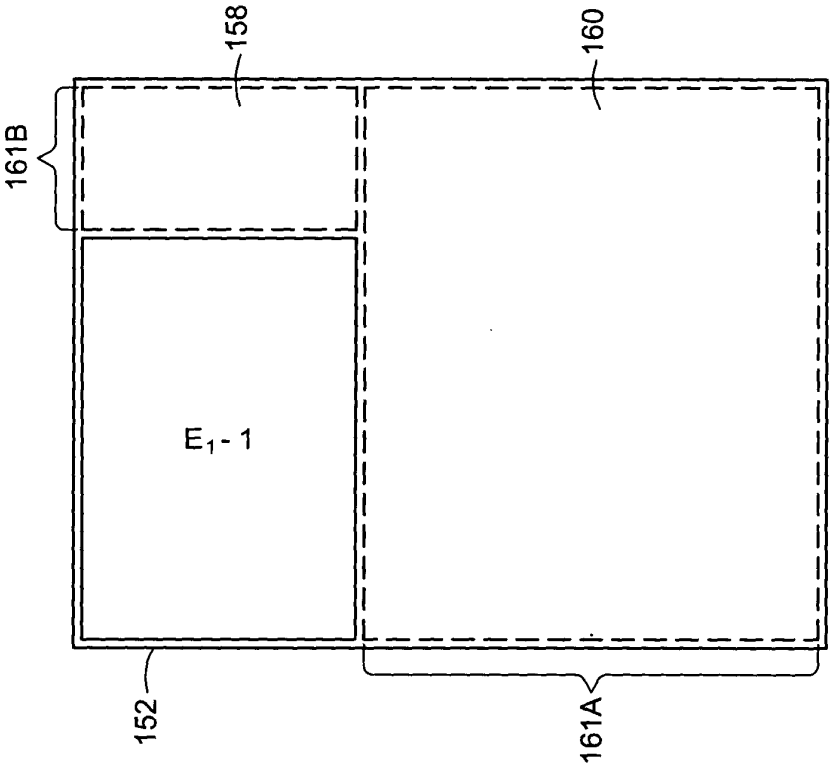

FIG. 21

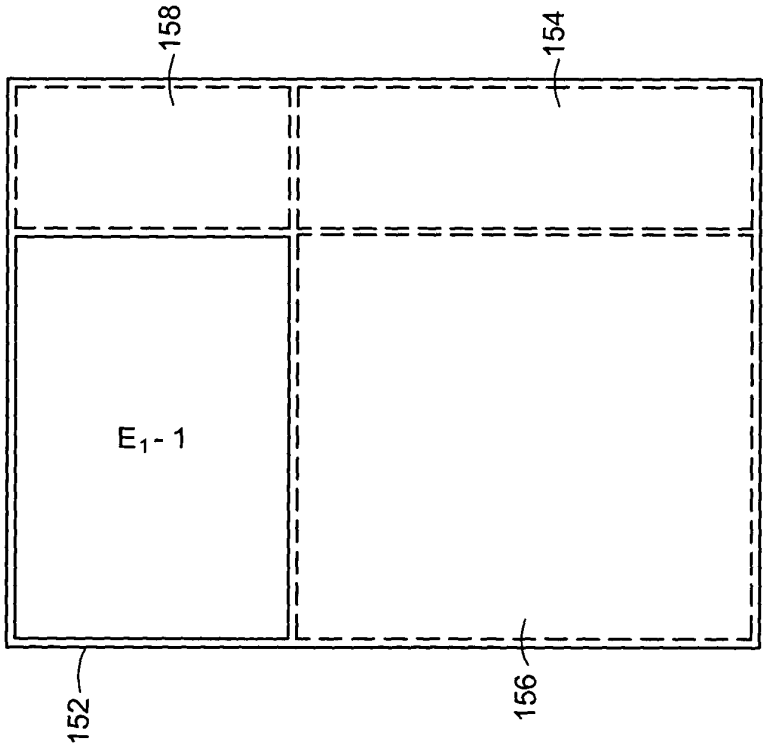

FIG. 20

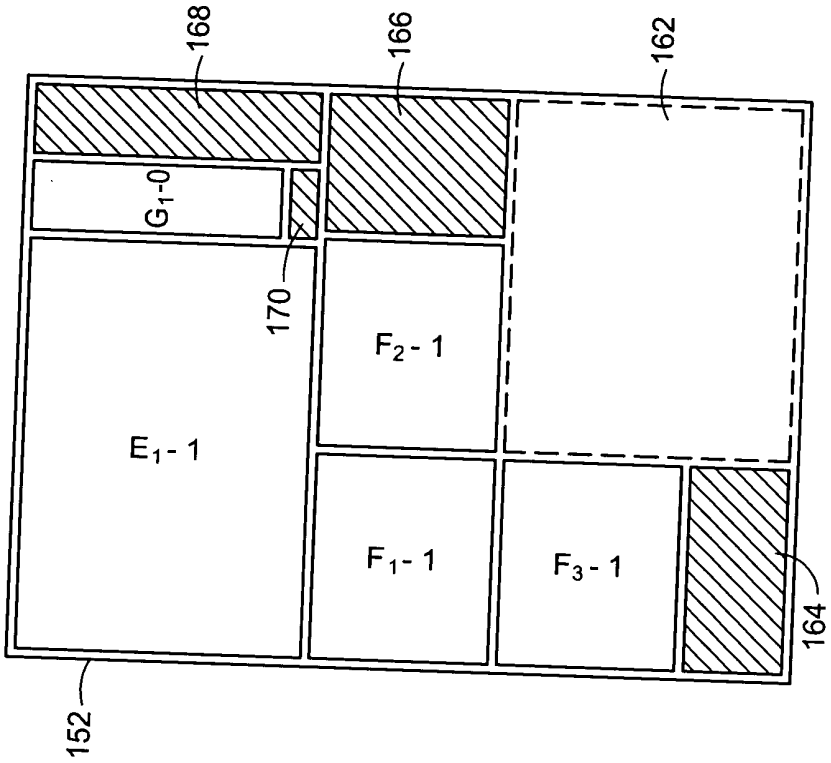
168
166
162
G_1-0
170
F_2 - 1
E_1 - 1
F_1 - 1
F_3 - 1
164
152

FIG. 23

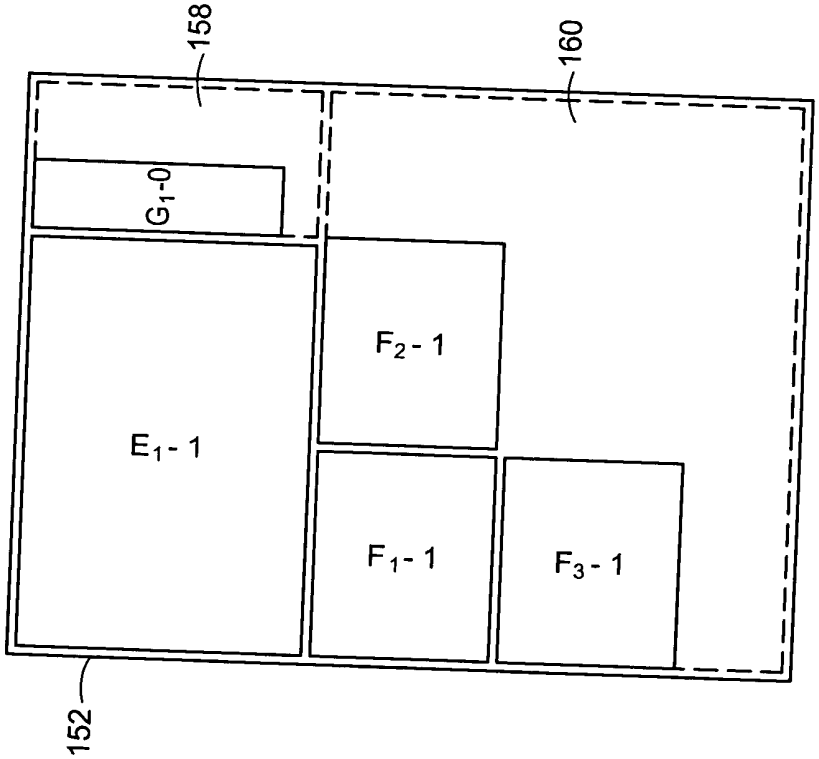
158
160
G_1-0
F_2 - 1
E_1 - 1
F_1 - 1
F_3 - 1
152

FIG. 22

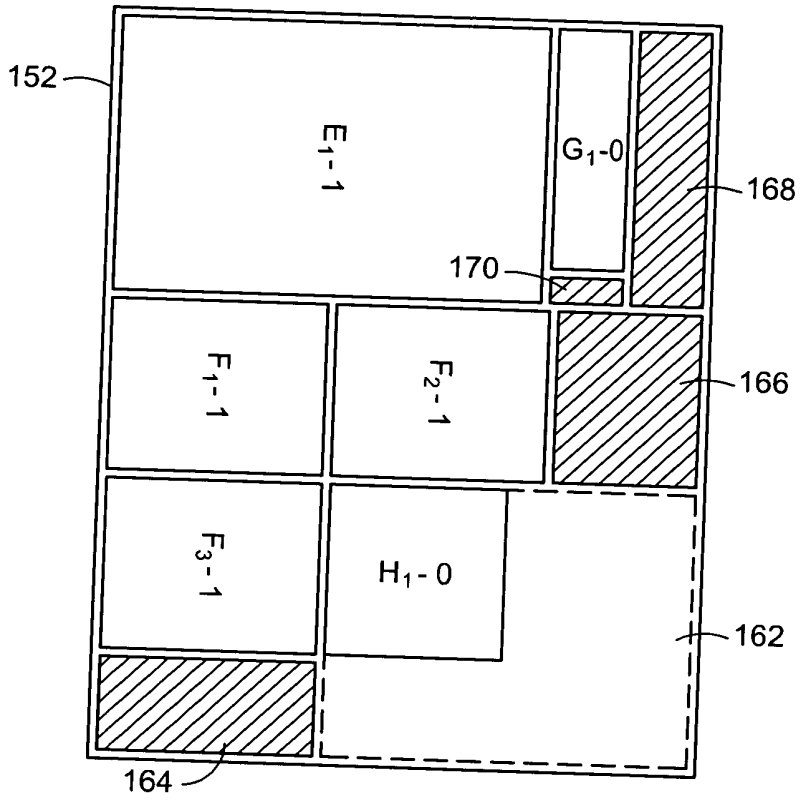

FIG. 24